

**6-1: Quadratic Expressions, Rectangles, and Squares**

- What is the standard form of a quadratic?
- Be able to identify a, b, and c from a quadratic...for many reasons!
- What is the binomial square theorem?

**6-2: Absolute Value, Square Roots, and Quadratic Equations**

- What shape is an absolute value graph?
- We should find the \_\_\_\_\_ first when graphing an absolute value graph.
- What is the absolute value-square root theorem?
- Know how to solve absolute value equations, such as  $|2x + 7| = 13$ .
- What is an irrational number?

**6-3: The Graph-Translation Theorem (Or more like Vertex Form of a Quadratic!)**

- If you start out with an equation like  $y = x^2$ , be able to write an equation for a new graph that has moved  $T_{b,k}$ .
- What is the vertex form of a parabola?
- Why is the vertex form of a parabola called the vertex form?
- Why do we need to find the vertex in a parabola?
- VERTEX!
- How do we know if a parabola opens up or down?
- Where is the axis of symmetry for a parabola?
- A parabola will have a minimum when \_\_\_\_\_ and a maximum when \_\_\_\_\_.
- Be able to switch from vertex form to standard form
- Did I mention the vertex?

**6-4: Graphing  $ax^2 + bx + c$**

- What form is that called again?
- Switch back into vertex form!
- We can find the vertex from standard form by using  $b =$  \_\_\_\_\_ and  $c =$  \_\_\_\_\_. These equations came from switching the general vertex form into standard form.
- What is Newton's Formula?
- What are the two possible values for g in Newton's Formula?
- Why do we need to find the vertex first again? I forgot already.

**6-5: Completing the Square**

- When we complete the square, we make a special type of polynomial known as a \_\_\_\_\_ which can be factored into a binomial squared.
- What are the steps we follow for completing the square, which allows us to switch from standard form to vertex form?

### 6-6: Fitting a Quadratic Model to Data

- How many points do we need to determine our quadratic?
- What can we say about the independent variables of these points?
- We plug these points into what equation?
- What kind of mathematical situation do we create by plugging in these points?
- The equation we get in the end is only a model. It only models the parabola, and does not have to work out perfectly.

### 6-7: The Quadratic Formula

- Pop Goes the Weasel
- What is the quadratic formula?
- The quadratic formula is found by rewriting the standard form.
- Once again, we need to be able to identify  $a$ ,  $b$ , and  $c$ .
- Using the quadratic formula allows us to find the \_\_\_\_\_ variable.
- What does the quadratic formula solve for us?
- What are some of the different names we use for the solution of the quadratic formula?

### 6-8: Imaginary Numbers

- What are imaginary numbers?
- Imaginary numbers allow us to find the square roots of \_\_\_\_\_.
- What does  $i = ?$
- Be able to work with imaginary numbers. All the properties of addition, subtraction, multiplication, and division apply.

### 6-9: Complex Numbers

- What is a complex number?
- In a complex number, which part MUST ALWAYS come first?
- Two complex numbers are equal if and only if \_\_\_\_\_.
- Be able to work with complex numbers. All the properties of addition, subtraction, multiplication, and division apply.
- What is a complex conjugate?
- What happens when I multiply a complex number by its complex conjugate?

### 6-10: Analyzing Solutions to Quadratic Equations (The Discriminant)

- What is the discriminant?
- If the discriminant is positive, how many solutions are there?
- If the discriminant is zero, how many solutions are there?
- If the discriminant is negative, how many solutions are there?
- VERTEX! (I just wanted to throw that in there!)

\*\*\*Check the Chapter 6 wiki page for Wiki Summary assignments!!!\*\*\*

Chapter 6 Projects (p. 408-9) are due the day *after* the Chapter 6 Test Part II. You may work with one partner, and you should begin working on it sooner rather than later. We will use the same rubric as the other chapters.